

Figs. 47A1 through 47A4, taken together, is a system block functional diagram of the operating system design for the automatically-activated laser scanning bar code symbol reading system shown in Fig. 47, wherein automatic IR-based object detection is employed during system operation; and

Figs. <sup>48A1</sup>~~47A1~~ through <sup>48C4</sup>~~47C4~~, taken together, show a high level flow chart of the control process carried out by the control subsystem of the bar code symbol reading system of Figs. 47A1 through 47A4.

# DETAILED DESCRIPTION OF THE ILLUSTRATIVE EMBODIMENTS OF THE PRESENT INVENTION

Referring to the figures in the accompanying Drawings, the various illustrative embodiments of the automatically-activated laser scanning bar code symbol reading system of the present invention will be described in great detail, wherein like elements will be indicated using like reference numerals.

Prior to detailing the various illustrative embodiments of the present invention, it will be helpful to first provide a brief overview of the system and method thereof.

As illustrated in Blocks A and B of Fig. 1, the present invention teaches an automatically-activated bar code symbol reading system 1000 comprising a bar code symbol reading mechanism 1001 contained within a hand-supportable housing 1002 having a manually-activatable data transmission switch 1003. During symbol reading operations, the bar code symbol reading mechanism 1001 automatically generates a visible laser scanning pattern 1004 for repeatedly reading one or more bar code symbols 1005 on an object 1005B within a bar code symbol reading cycle, and automatically generating a new symbol character data string 1006A, or 1006B, respectively, in response to each bar code symbol read thereby. In general, each bar code symbol reading cycle has a predetermined time extent controlled by one or more timers that are periodically monitored during system operation.

During the first step of the bar code symbol reading method of the present invention illustrated at Block A of Fig. 1, the user 1007 visually aligns the visible laser scanning pattern 1004 with a particular bar code symbol 1005A on an object (e.g. product, bar code menu, etc.) 1005B so that the bar code symbol is scanned, detected and decoded in a cyclical manner